

STATE OF SOUTH DAKOTA
 DEPARTMENT OF TRANSPORTATION
 PLANS FOR PROPOSED

PROJECT P 0010(00)273
COUNTY HIGHWAY 9
(120th ST)
BROWN COUNTY

Spot Asphalt Resurfacing

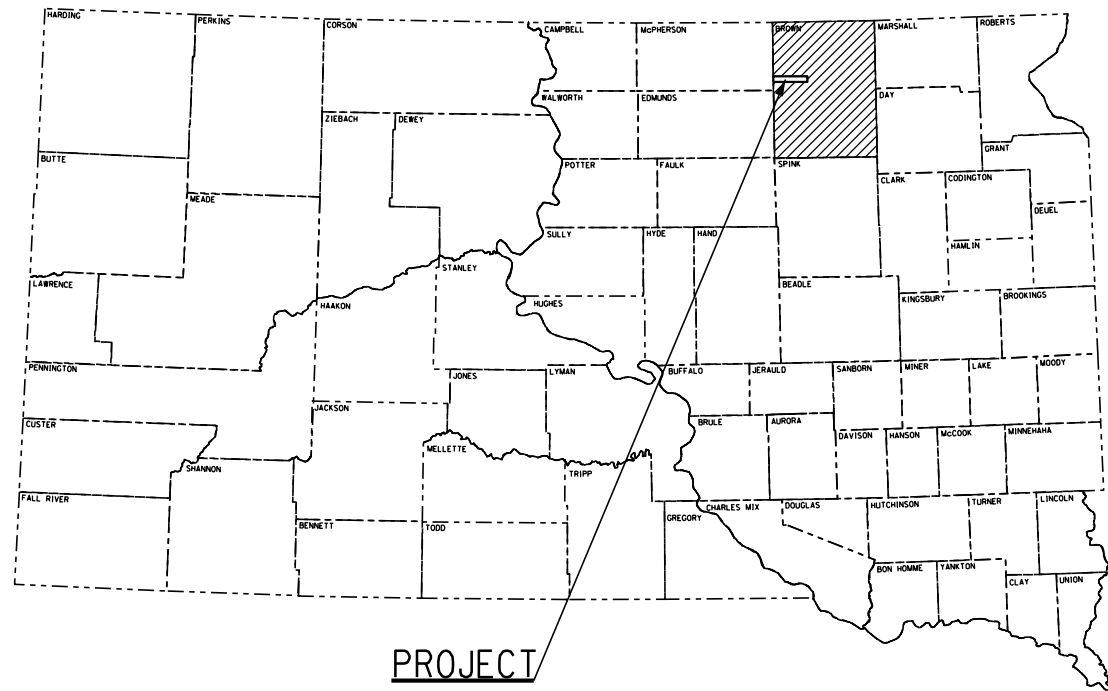
PCN 073D

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0010(00)273	1	8

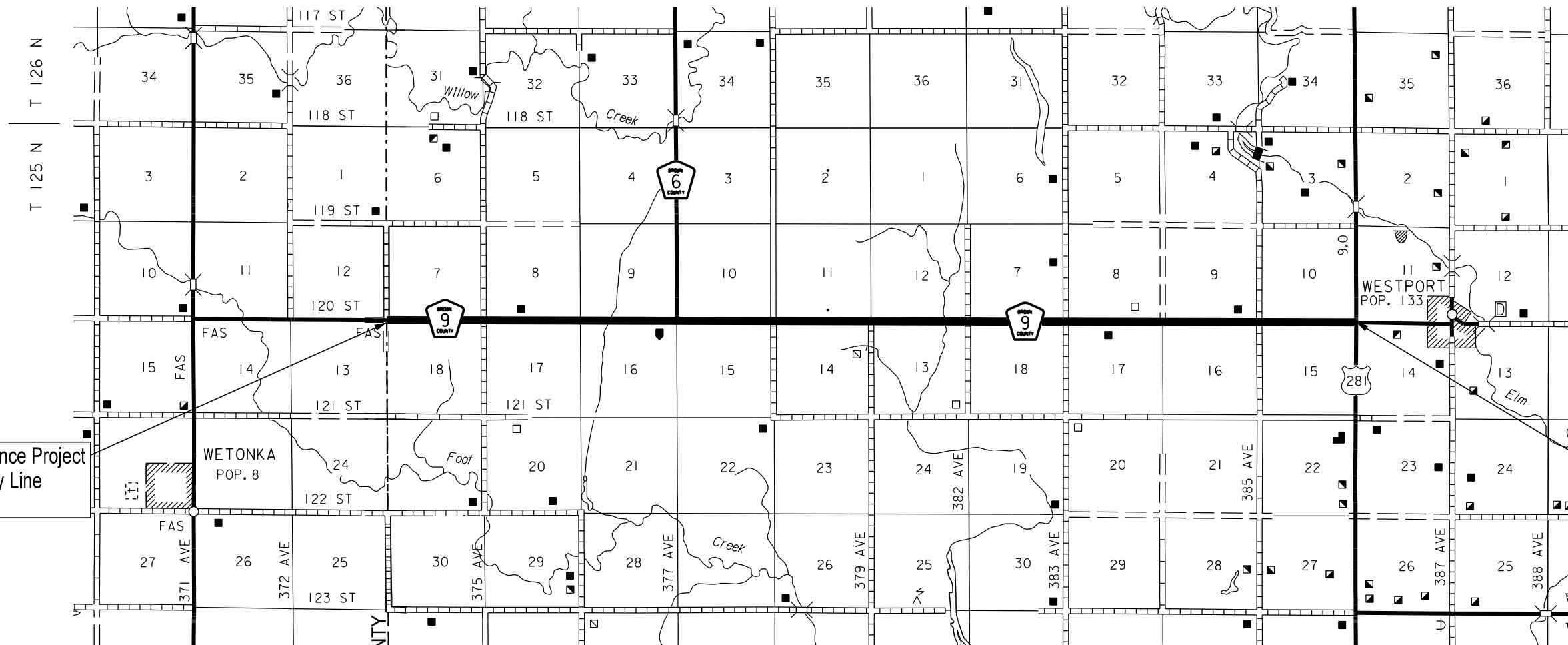
INDEX OF SHEETS

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PLOT SCALE - 1:7000



PROJECT



Begin Surface Maintenance Project
 @ McPHERSON County Line
 STATION 0+00

End Surface Maintenance Project
 @ US 281
 STATION 528+72

DESIGN DESIGNATION

AADT (2017)	90
AADT (2037)	120
DHV	18
D	50%
DHV T%	3.5%
AADT T%	7.7%
V	55 mph

R 66 W

McPHERSON COUNTY
 BROWN COUNTY

R 65 W

R 65 W

R 64 W

GROSS LENGTH	52872 FEET	10.01MILES
LENGTH OF EXCEPTIONS	0 FEET	0MILES
NET LENGTH	52872 FEET	10.01MILES

PLOTTED FROM - TRABINT01

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PLOT NAME - 1

ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0010(00)273	2	8

Revised 6/3/19 B.S.

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E1010	Remove Asphalt Concrete Pavement	500.0	SqYd
320E1200	Asphalt Concrete Composite	5,000.0	Ton
633E1300	Pavement Marking Paint, White	340	Gal
633E1305	Pavement Marking Paint, Yellow	96	Gal
634E0010	Flagging	100.0	Hour
634E0020	Pilot Car	50.0	Hour
634E0110	Traffic Control Signs	137.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0630	Temporary Pavement Marking	8.0	Mile

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Section A Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <http://www.sddot.com/resources/Manuals/EnvironProcManual.pdf>

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Office at 605-773-3098 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

COMMITMENT B2: WHOOPING CRANE

The Whooping Crane is a spring and fall migratory bird in South Dakota that is about 5 feet tall and typically stops on wetlands, rivers, and agricultural lands along their migration route. An adult Whooping Crane is white with a red crown and a long, dark, pointed bill. Immature Whooping Cranes are cinnamon brown. While in flight, their long necks are kept straight and their long dark legs trail behind. Adult Whooping Cranes' black wing tips are visible during flight.

Action Taken/Required:

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow pits, or staging areas associated with the project, cease construction activities in the affected area until the Whooping Crane departs and immediately contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

COMMITMENT C: WATER SOURCE

The Contractor will not withdraw water with equipment previously used outside the State of South Dakota or previously used in aquatic invasive species waters within South Dakota without prior approval from the SDDOT Environmental Office. Thoroughly wash all construction equipment to prevent and control the introduction and spread of invasive species into the project vicinity.

The Contractor will not withdraw water directly from streams of the James, Big Sioux, and Vermillion watersheds without prior approval from the SDDOT Environmental Office.

Action Taken/Required:

The Contractor will obtain the necessary permits from the regulatory agencies such as the South Dakota Department of Environment and Natural Resources (DENR) and the United States Army Corps of Engineers (USACE) prior to water extraction activities.

Additional information and mapping of Aquatic Invasive Species in South Dakota can be accessed at: <http://sdleastwanted.com/maps/default.aspx>.

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor will furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the Public ROW.

The waste disposal site(s) will be managed and reclaimed in accordance with the following from the General Permit for Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) will not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Environmental Office and the Project Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements will apply:

- Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with fences, gates, and placement of a sign or signs at the entrance to the site stating "No Dumping Allowed".
- Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10.06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) will be incidental to the various contract items.

ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0010(00)273	3	8

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

State Historical Preservation Office (SHPO or THPO) concurrence has not been obtained for this project.

Action Taken/Required:

All earth disturbing activities not designated within the plans require a cultural resource review prior to scheduling the pre-construction meeting. This work includes, but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

The Contractor will arrange and pay for a record search and when necessary, a cultural resource survey. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view of which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

The Contractor will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office to determine an appropriate course of action.

The Contractor is responsible for obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0010(00)273	4	8

SCOPE OF WORK

Work on this project involves placement of Asphalt Concrete Composite, and pavement markings. The intent of this project is to repair the road sufficiently to be used as detour route for SD Highway 10.

GENERAL TRAFFIC CONTROL

All temporary traffic control sign locations will be set in the field by the Contractor and verified by the Engineer prior to installation.

The bottom of signs on portable or temporary supports shall not be less than seven feet above the pavement in urban areas and one foot above the pavement in rural areas. Portable sign supports may be used as long as the duration is less than 3 days. If the duration is more than 3 days the signs shall be on fixed location, ground mounted, breakaway supports.

Wait times for the traveling public shall be kept to 15 minutes or less.

All construction operations will be conducted in the general direction of traffic movement.

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD, whichever is more stringent will be used, as determined by the Engineer.

Unless otherwise stated in these plans, work will not be allowed during hours of darkness.

Traffic Control Signs, as shown in the Estimate of Quantities, are estimates. Contractor's operation may require adjustments in quantities, either more or less. Payment will be for those signs actually ordered by the Engineer and used.

All haul trucks will be equipped with an additional flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights will be incidental to the various related contract bid items.

Traffic will be maintained on the driving lanes. Use of the shoulder as a driving lane will not be permitted. Any damage to the shoulder due to rerouted traffic or Contractor's equipment will be repaired at no expense to the Department.

A mobile work operation will be allowed provided the flush sealing and pavement marking can be completed satisfactorily by a continuously moving work operation. A mobile work operation will require approval by the Engineer.

SHEETING FOR TRAFFIC CONTROL SIGNS

All fluorescent orange background material on traffic control signs, all temporary delineators, and all temporary STOP (R1-1), YIELD (R1-2), DO NOT ENTER (R5-1), and WRONG WAY (R5-1a) signs will conform to the requirements of ASTM D4956 Type IX or XI. All other traffic control signs and background colors will conform to the requirements of ASTM D4956 Type IV.

FLAGGING

Operations will be conducted so that the traveling public will not have to wait longer than 15 minutes at the flagger station.

It is required that the flaggers be able to communicate with one another. If an emergency vehicle needs to pass through the project, the Contractor will be required to expedite traffic movement. All costs associated with this will be incidental to the contract unit price per hour for "Flagging".

SHOULDER PREPARATION

Vegetation and accumulated material adjacent to the existing surface edge shall be removed to the satisfaction of the Engineer prior to placement of mainline surfacing. Any remaining windrow of accumulated material shall be re-spread evenly on the inslope adjacent to the asphalt shoulder to the satisfaction of the Engineer prior to the application of the flush seal.

Any vegetation damaged outside of the asphalt concrete limits shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

This shoulder work shall be incidental to other contract items. Separate measurement and payment will not be made.

INTERSECTING ROADS AND ENTRANCES

Intersecting roads and entrances shall be satisfactorily cleared of vegetation, shaped, and compacted prior to placement of mainline surfacing. This work will be considered incidental to other contract items. Separate measurement and payment will not be made. This note only applies to areas affected by asphalt concrete placement.

REMOVAL OF DAMAGED ASPHALT

Removal of loose and deteriorated asphalt surfacing may be required prior to patching. Removal areas shall be filled the same day as they are removed. The work will be done at the discretion and to the satisfaction of the Engineer. Hand work can be anticipated, use of power brooms and or compressed air may also be required. A lift of asphalt concrete equivalent to the surrounding asphalt shall be placed in the removal area prior to placing the final lift of asphalt; hand, and loader patching will be acceptable, wheel rolling with a pneumatic tired machine will be required. The work will be paid for at the contract unit price per square yard for REMOVE ASPHALT CONCRETE PAVEMENT. 50 Square Yards per mile have been included in the estimate of quantities. Asphalt Concrete will be paid for at the contract unit price per ton for ASPHALT CONCRETE COMPOSITE. Payment will be based on field measurements.

SURFACING THICKNESS DIMENSIONS

Plans tonnage will be applied even though the thickness and width and length may vary from that shown on the plans.

At those locations where material must be placed to achieve a required elevation, plans tonnage may be varied to achieve the required elevation.

ASPHALT CONCRETE PATCHING

Patching shall begin at station. 0+00 and proceed towards US 281. The patches shall be a minimum of 1.5 inches thick and match the slope and width of the existing road. A thickness of greater than 1.5 inches will not be allowed unless approved by the Engineer. The minimum length of a patch shall be 120 feet. All patches shall be full width. The Contractor shall transition in and out of the patches at a rate of 40' to one inch of thickness to achieve a smooth ride. An informational table of patching has been included, a width of 24 feet and a depth of 1.5 inches has been used to calculate the tonnage in the table. By the time of construction it is anticipated that the patch areas in the table will be larger, than at the time the table was developed. Patch areas may be lengthened, or additional patch areas may be included, at the discretion of the Engineer. Due to the nature of this work a paver feeder will only be required when ordered by the Engineer.

For the purpose of calculating tack and flush seal approximately 60,000 Square Yards of roadway will be paved.

ASPHALT CONCRETE COMPOSITE

Asphalt Concrete Composite shall be paved at locations and thickness determined by the Engineer in the field. The Contractor shall notify the Engineer a minimum of 5 business days prior to the start of work to allow the engineer to mark the areas to be overlaid.

Included in the Estimate of quantities is 5000 Ton of Asphalt Concrete Composite.

All other requirements in the specifications for Asphalt Concrete Composite shall apply.

TEMPORARY PAVEMENT MARKINGS

The total length of no passing zone on this project is estimated to be **2.9** miles.

It is estimated that 20 DO NOT PASS (R4-1) and 20 PASS WITH CARE (R4-2) signs will be required to mark the no passing zones, should the Contractor elect to use these signs.

Quantities of Temporary Pavement Markings consist of:
 One pass on top of the Lift of Asphalt Concrete.
 One pass on top of the Flush Seal.

Temporary flexible vertical markers (tabs) will be used to mark dashed centerline, No Passing Zones, and applicable lane lines. Paint will not be allowed for temporary pavement marking on the asphalt concrete wear course or after application of the flush seal.

Covers on the tabs will be sufficiently secured to prevent traffic from dislodging the cover and when removed, the covers will be properly disposed of. The Contractor will remove and properly dispose of the tabs after permanent pavement marking is applied. Method of removal will be nondestructive to the road surface and will be accomplished within one week of completion of the permanent pavement marking.

Any temporary flexible vertical markers (tabs) with covers removed before the flush seal will be replaced prior to application of the flush seal.

In the absence of a signed lane closure or pilot car operation, FLAGGER (W20-7) symbol signs and flaggers, or a shadow vehicle with rotating yellow lights or strobe lights will be positioned on the shoulder in advance of workers for both directions of traffic during the installation and removal of the temporary flexible vertical markers (tabs). The traffic control device used will be moved intermittently to provide proper warning of the work operation. A ROAD WORK AHEAD (W20-1) sign, a WORKER (W21-1) symbol sign or a BE PREPARED TO STOP (W3-4) sign will be mounted on the rear of the shadow vehicle. The method of traffic control used by the Contractor for this work must be approved by the Engineer.

PERMANENT PAVEMENT MARKING

The Contractor will be required to repaint all existing pavement markings including centerline and edge line for the entire length of the project. The cost to duplicate the existing marking locations will be incidental to the contract unit prices for the various contract items.

All materials shall be applied as per manufacturer's recommendations.

The Contractor shall advise the Engineer a minimum of 3 weeks prior to the application of the permanent pavement marking to allow the State to check and mark the location of no passing zones.

The application of permanent pavement marking paint will begin no sooner than 7 calendar days following completion of flush seal. Application of permanent pavement marking will be completed within 14 calendar days following completion of the final surfacing.

For each working day the application of permanent pavement marking paint remains uncompleted beyond the time limits described in the preceding paragraph, the Contractor will be assessed liquidated damages at the rate of \$250.00 per day.

The liquidated damages shall apply up to the expiration of the contract time requirement in which the permanent pavement markings are required to be completed, including any formally approved time extensions. Following the expiration of the contract time requirement in which the permanent pavement markings are required to be completed, including any formally approved time extensions, liquidated damages will be assessed in accordance with Section 8.8 of the specifications.

RETROREFLECTIVITY FOR PAVEMENT MARKING PAINT

The Department may take retroreflectivity readings on the pavement marking lines after 2 days and within 30 days of the line application using either a portable or mobile retroreflectometer that conforms to 30-meter geometry. If the Department chooses to take retroreflectivity readings, three retroreflectivity readings will be taken on each line at each test location. The three readings will be averaged and become the reading for that test location.

If the Department chooses to take retroreflectivity readings, three readings will be taken on the edge lines in the direction of application. For combination solid yellow and skip yellow lines and for centerline markings on two-way roadways, three readings will be taken in one direction, the reflectometer will be turned 180 degrees and three more readings will be taken. The six readings for the centerline markings will be averaged and become the test reading for that test location.

If the Department chooses to take readings, the minimum retroreflectivity values will be 275 mc/m²/lux for white and 170 mc/m²/lux for yellow.

INFORMATIONAL TABLE OF PATCHING				
Station	to	Station	Distance (ft)	Asphalt Concrete Composite (ton)
7+22		9+22	200	44.44
20+35		23+00	265	58.89
41+50		43+75	225	50.00
80+60		82+00	140	31.11
98+20		100+20	200	44.44
106+00		108+60	260	57.78
121+00		123+00	200	44.44
131+40		134+00	260	57.78
141+00		144+00	300	66.67
220+93		223+00	207	46.00
253+30		255+31	201	44.67
282+56		285+00	244	54.22
289+89		296+23	634	140.89
319+55		324+51	496	110.22
329+22		332+00	278	61.78
351+90		354+00	210	46.67
357+51		363+63	612	136.00
367+03		370+33	330	73.33
385+14		388+20	306	68.00
388+34		394+94	660	146.67
400+11		407+00	689	153.11
413+00		424+00	1100	244.44
425+23		427+50	227	50.44
437+93		441+93	400	88.89
456+50		465+00	850	188.89
480+00		482+00	200	44.44
483+00		486+00	300	66.67
492+26		496+00	374	83.11
503+44		528+72	2528	561.78
AC Pavement Removal Areas				41.67
Total				2907.45

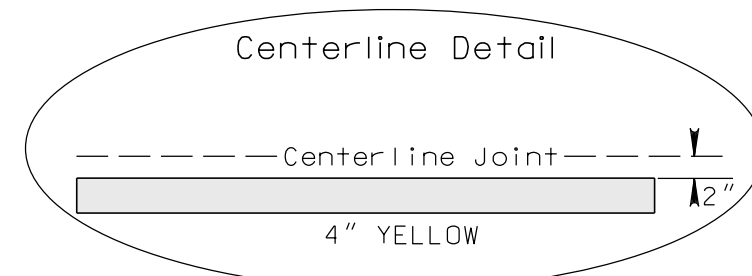
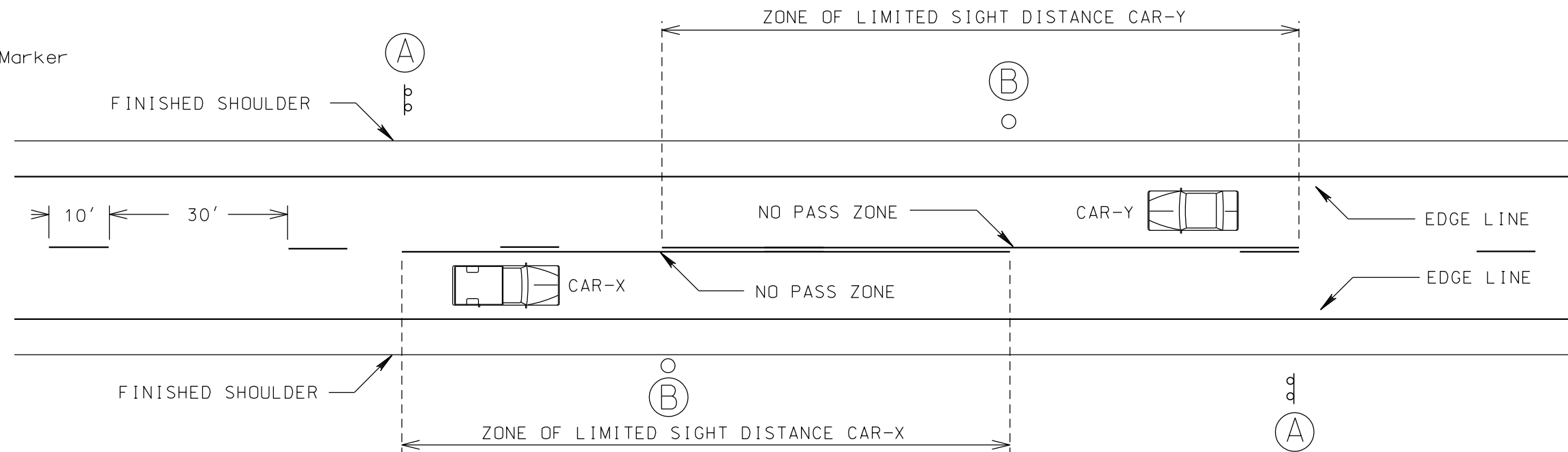
ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-11	UNEVEN LANES	2	48" x 48"	16.0	32.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					137.0

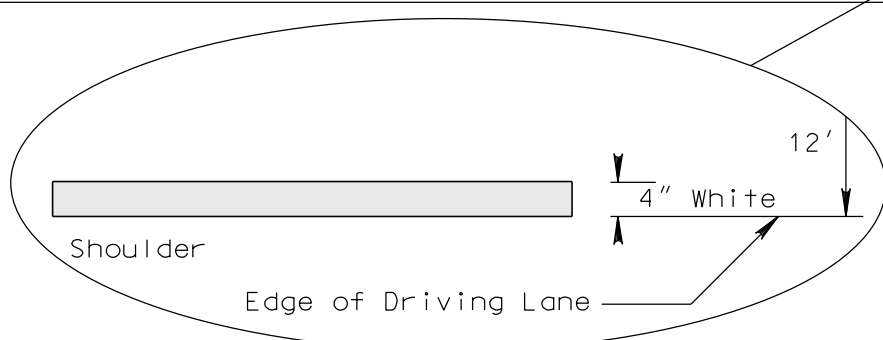
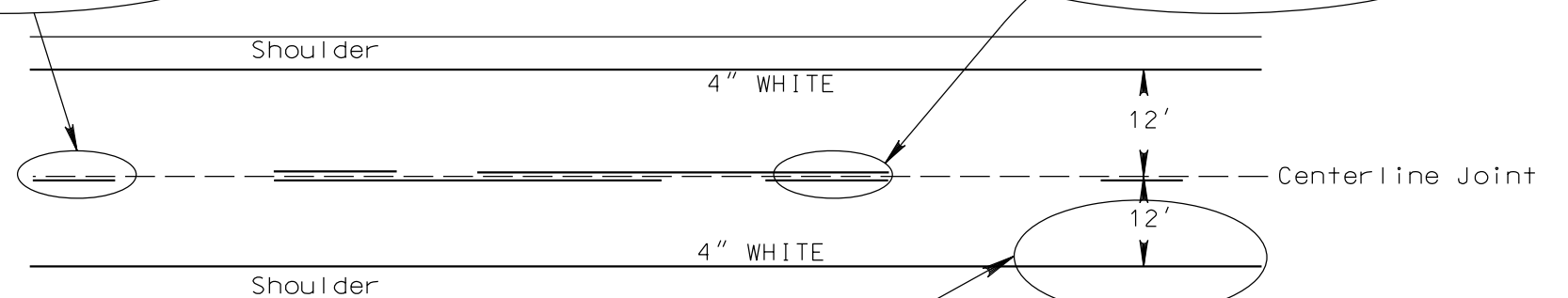
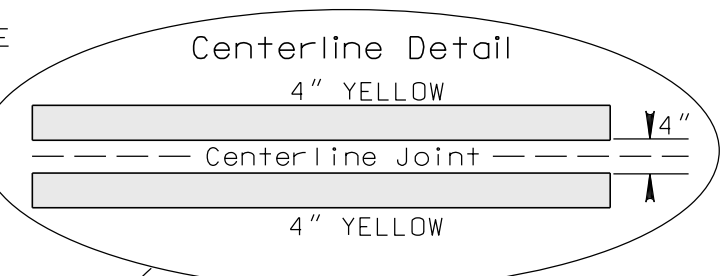
TYPICAL PAVEMENT MARKING LAYOUT



(A) NO PASSING ZONE
(B) End of Zone Marker



NOTE: A TWO "GUN" SYSTEM SHALL BE USED TO OBTAIN THIS PATTERN.
WHEN A SINGLE SKIP LINE EXISTS, THE SKIP SHALL BE PLACED TO THE SOUTH OR EAST OF THE CENTERLINE JOINT.



FURNISHING AND APPLYING PAVEMENT MARKING PAINT

- The approximate paint application rates shall be as follows:

Undivided Roadway	Divided Roadway
Yellow Centerline 12± Gallons/Pass-Mile (Includes No-passing lines)	White Centerline 4.60 Gallons/Pass-Mile
White Edgeline 16.90 Gallons/Pass-Mile (Solid Line)	Yellow or White Edgeline 16.90 Gallons/Pass-Mile (Solid Line)
- The typical pavement markings as shown on this sheet shall be applied throughout the entire length of the project.
- Exact location of the NO PASSING ZONE lines will be determined in the field by the Engineer. A dash of white paint will mark the beginning and end of all no passing zones. NO PASSING ZONE signs and the ending post in fence lines, if present, shall not be used as the beginning and ending NO PASSING ZONE lines.
- Traffic Control shall be incidental to the cost of application. The striping and advance or trailing warning vehicle shall be equipped with flashing amber lights or advance warning arrow panel.
- When a single skip line exists, the skip shall be placed to the south or east of the centerline joint.

PLOT SCALE - 1:22

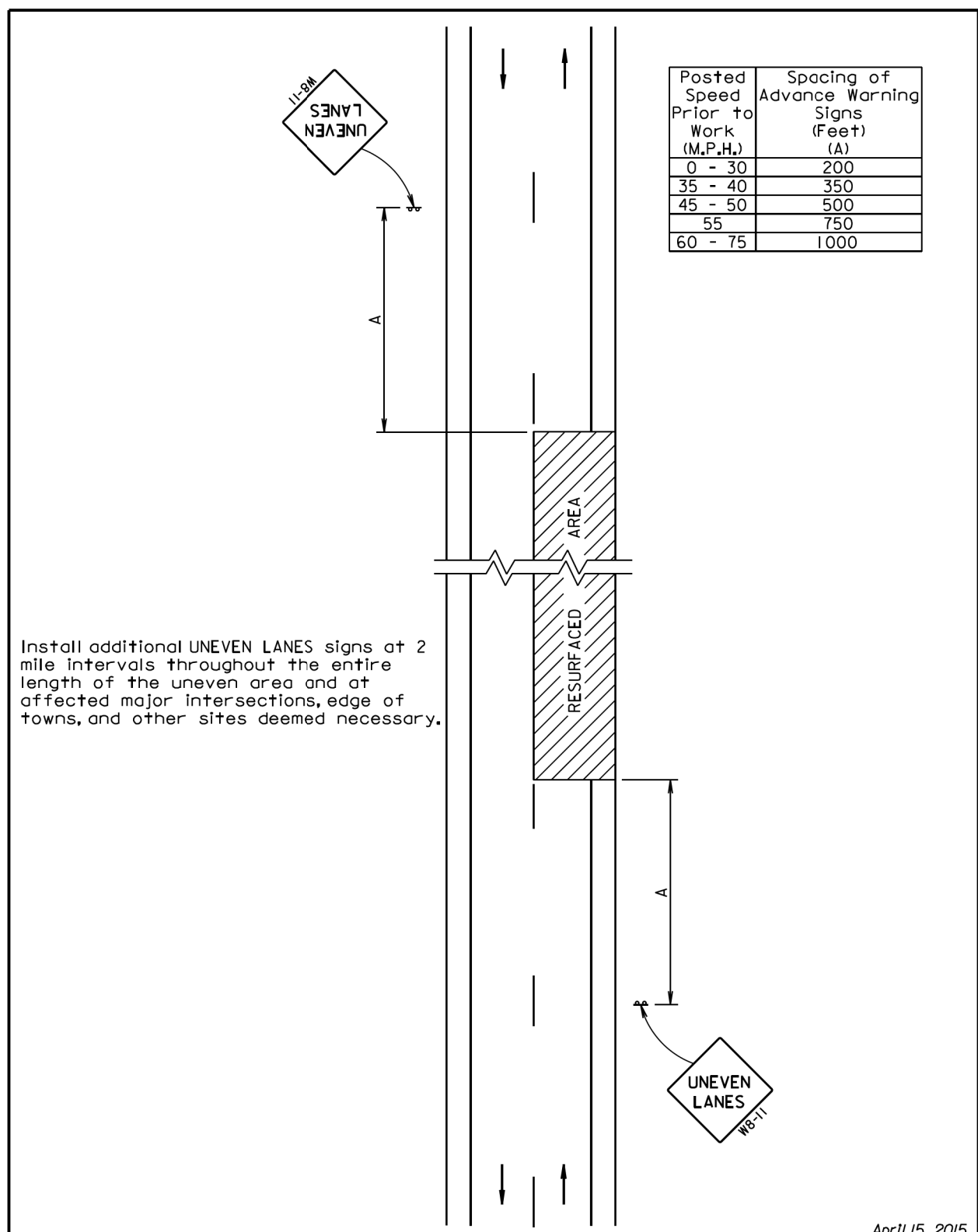
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PLOT NAME - 3

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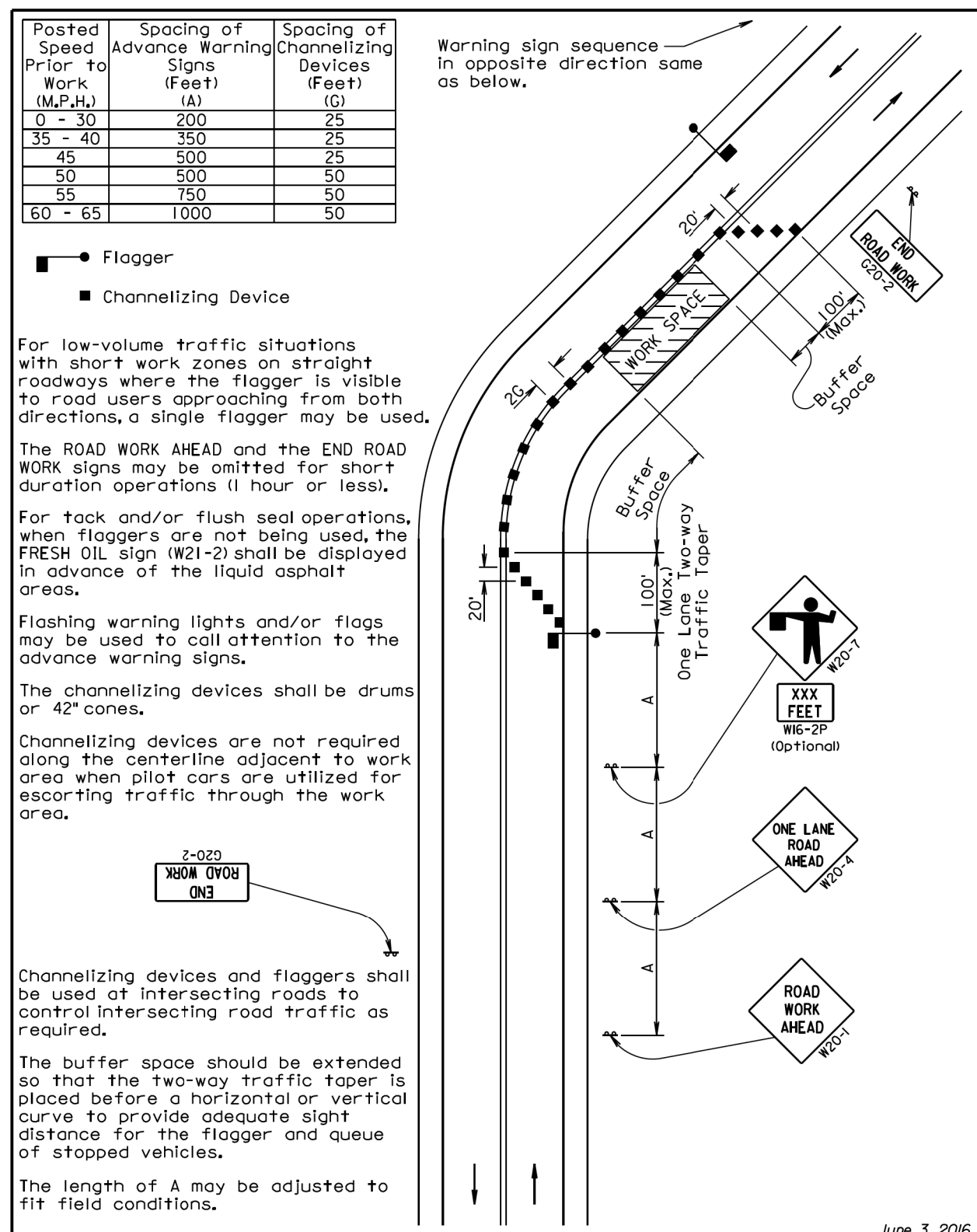
Plotting Date: 05/31/2019

PLOT SCALE - 1:200



S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES UNEVEN ROAD SURFACE	PLATE NUMBER 634.22
	Published Date: 2nd Qtr. 2019	Sheet 1 of 1

PLOT NAME - 1



S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
	Published Date: 2nd Qtr. 2019	Sheet 1 of 1

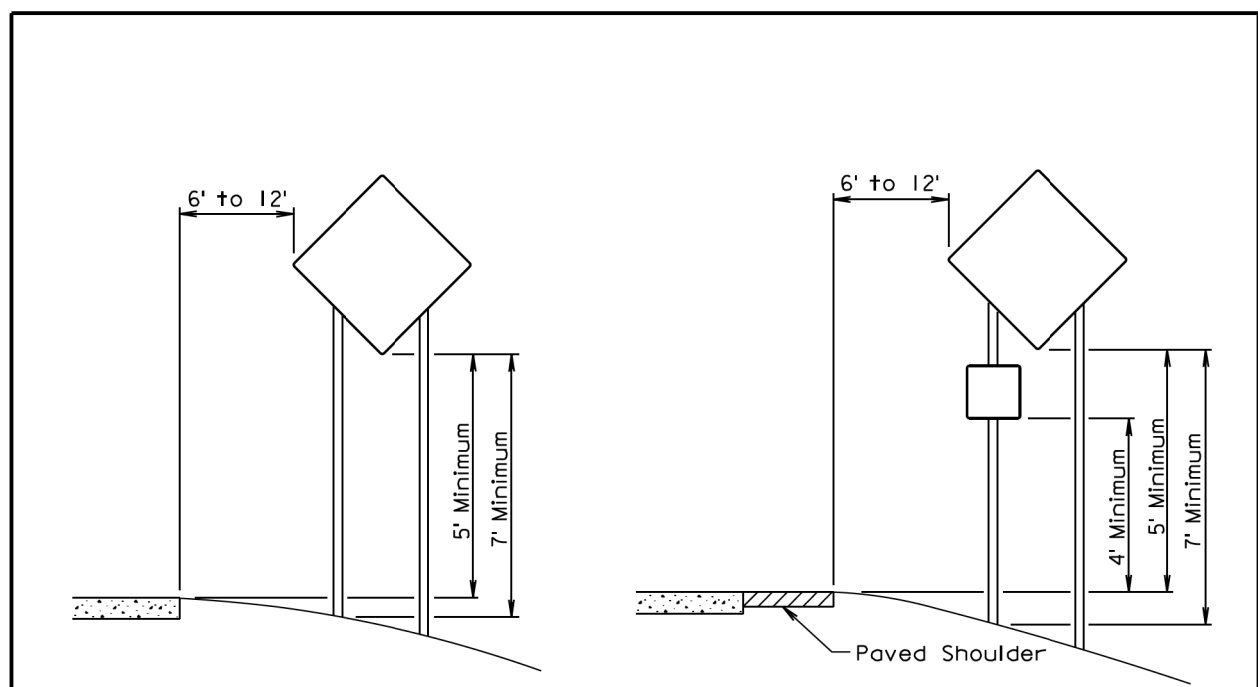
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Plotting Date: 05/31/2019

PLOT SCALE - 1:200

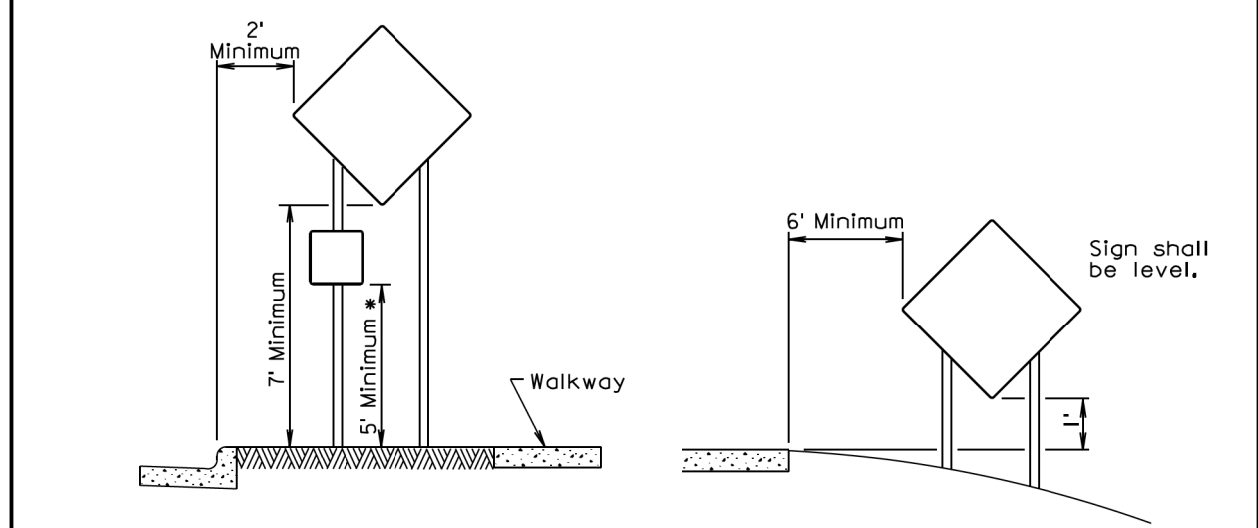
PLOT NAME - 2

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RURAL DISTRICT

RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

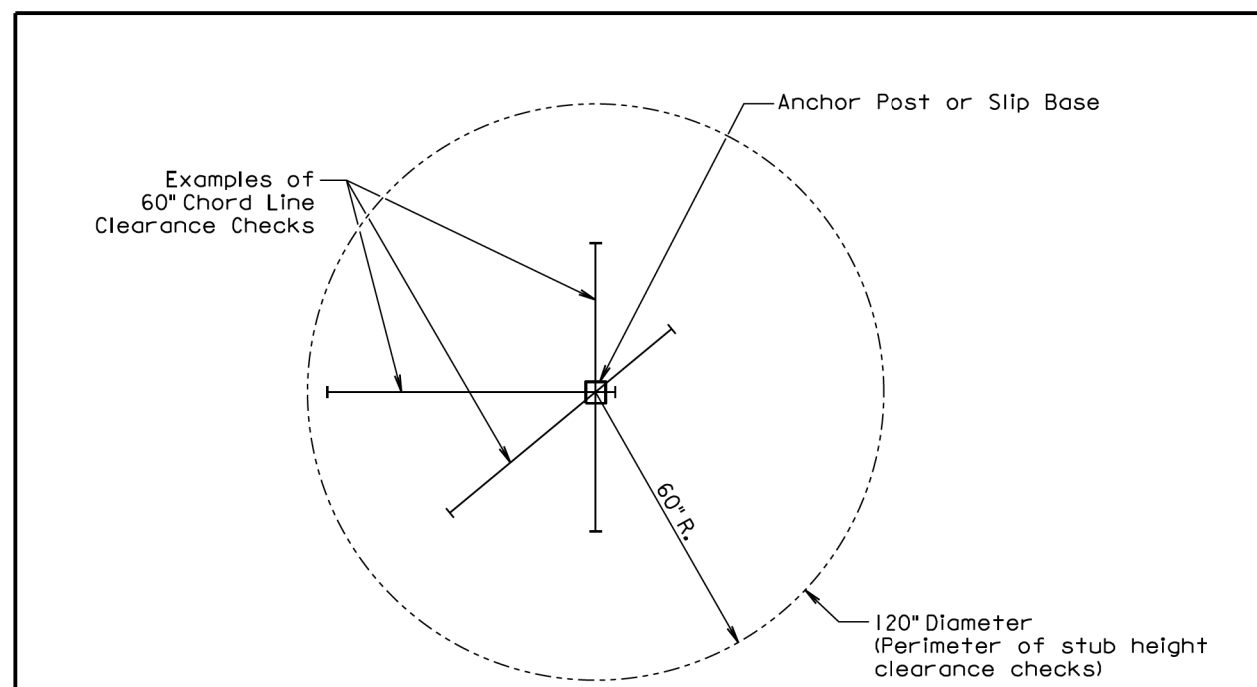
RURAL DISTRICT 3 DAY MAXIMUM

* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

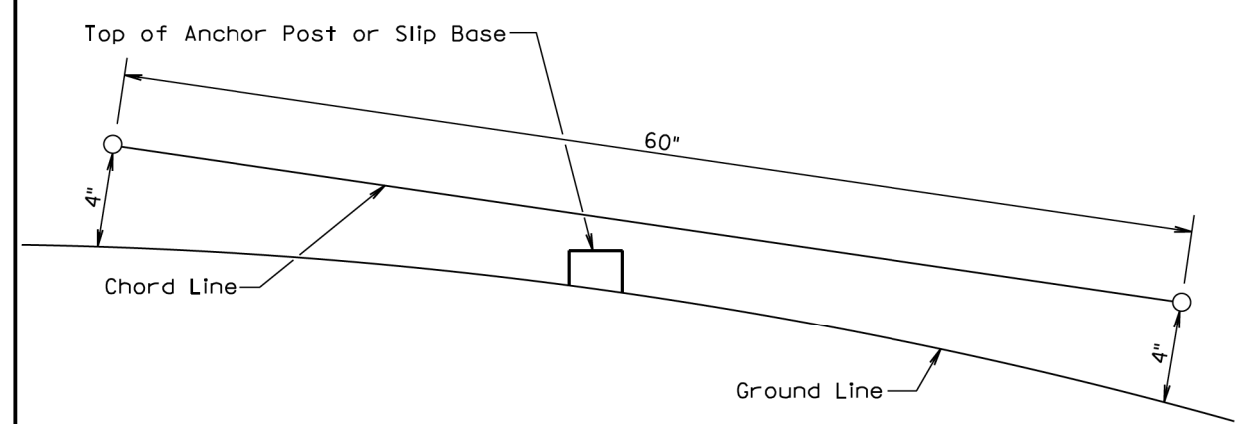
(Not applicable to regulatory signs)

September 22, 2014

Published Date: 2nd Qtr. 2019	S D D O T	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

The top of anchor posts and slip bases SHALL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height shall be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

July 1, 2005

Published Date: 2nd Qtr. 2019	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1